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Special Crops

Newsletter



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Special Crops Product Team

The Special Crops Product Team represents a cross-section of specialists from Alberta Agriculture, Food and Rural Development and Agriculture and Agri-Food Canada. It is a liaison between industry and government. The Team's mission is to lead departmental activities in Special Crops, consistent with industry objectives, in response to diversification, value-added and market place opportunities.

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The Prospect of Hemp

Pockets of industrial hemp production still exist in Europe, Central Asia and the Far East. Cotton, jute and synthetic fibers replaced hemp in the textile industry in the late thirties. Wood pulp pushed it out of paper manufacturing. Outlawing hemp production in many countries added to its decline. The Canadian government outlawed hemp production in 1938. However, the ban was lifted during the Second World War to enable production of badly needed items such as twine, rope, fire hoses and parachute webbing.

The existing North American market is valued at between \$28 and \$30 million U.S. and is increasing at a rate of \$8 to \$10 million U.S. per year. The global market for hemp is valued from \$100 to \$200 million U.S. annually. Hemp has a potential to generate employment in farming, processing, manufacturing and retail.

Some believe hemp could be Canada's answer to cotton. In Europe, hemp is considered as a high yielding crop, claimed to improve soil structure, to suppress weeds effectively and to be virtually free from pests and diseases.

Hemp does suffer from the "snicker factor", largely because of its close association with marijuana, its consciousness-altering cousin. We have a lot of challenges ahead of us regarding this wonder crop. Not only do we have to develop production, harvesting and processing techniques, but we must also find markets for this crop. The way interest is being expressed in hemp production, it could become the "revolutionary" crop for the agriculture industry in Alberta.

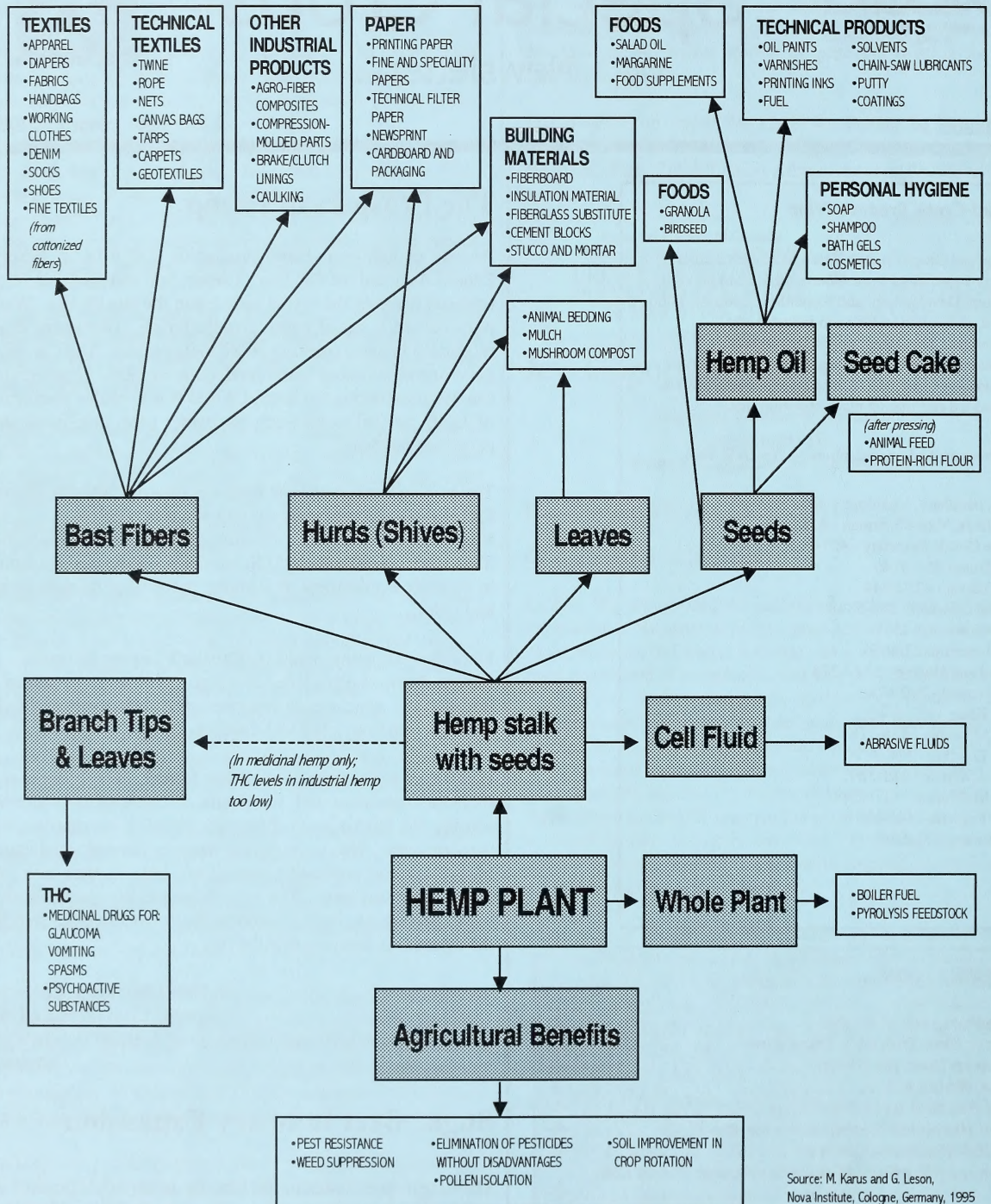
G. Nabi Chaudhary, Chairman
 Special Crops Product Team
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Sugar Beet Industry Expansion

The sugar beet industry in Canada is on the threshold of expansion. Despite the closure of the sugar factory in Manitoba, acreage in sugar beet production is going to increase in Alberta and Ontario.

(cont'd page 3)

MODERN USES FOR HEMP



Source: M. Karus and G. Leson,
Nova Institute, Cologne, Germany, 1995

In 1997, total acreage under sugar beets in Alberta was just over 33,000 acres. The allocation to production of sugar beets in Alberta will increase by almost 9,000 acres in 1998, and by 8,000 acres in 1999. Thus, the 1999 sugar beet crop in Alberta will occupy 50,000 acres of irrigated land in southern Alberta. Increased acreage under sugar beets has also led to a \$35 million expansion at the Taber sugar factory. Beet producers and the Rogers Sugar Company have negotiated a five-year price agreement for beets. The financial commitment to modernize and expand the sugar processing facility at Taber and increased sugar beet acreage have contributed to a bright future for the industry in Alberta.

Sugar beet production is also making a come back in Ontario after a 30-year break. Closure of the sugar beet factory at Chatham, Ontario signaled the end of 65 years of sugar beet production in the province. An opportunity arose in 1996 to produce sugar beets for a Michigan Sugar Company. Five producers jumped at the chance. In 1997, that number increased to 70. The success of the small-acreage 1996 crop spurred increased interest from both the company and producers. Michigan Sugar contracted with 70 producers for approximately 3,000 acres. The 1997 crop produced an average of 19 tonnes of beets per acre. Although the yield was lower, the dry conditions during the later part of the growing season contributed to an excellent 19.3% average sugar content. The Ontario growers would eventually like to see dedicated acreage rise to around 10,000 acres, but the Michigan Sugar Company has not committed itself to a specific objective. The company wants to expand the acreage in Ontario gradually. (Source: The Sugar Beet Grower, November/December 1997).

G. Nabi Chaudhary, Chairman
Special Crops Product Team
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New Water Act

From an irrigation stand point, the new Alberta Water Act will allow for greater flexibility in the use and administration of water by both the licensee (water user, i.e. Irrigation District or individual)) and the licensor (Alberta Environmental Protection). These are some of the changes being implemented:

1. Will now be easier to change the point of diversion and the irrigable area locations, giving irrigators greater flexibility.
2. Alberta Environmental Protection can make changes to licenses due to aquatic impacts (i.e. to accommodate fish habitat).
3. Licenses can be cancelled if there is no use of license/water for three years and no prospective use of water.

4. Licensee can now amalgamate a number of projects and use the same source under the same license. However, each project has a different priority number. In the event of a water shortfall, the last project amalgamated may be the first to lose access to water.
5. Ability to transfer a license to new land to be irrigated. Presently this can only occur through an Order in Council signed by Cabinet or unless a water management plan exists and allows the transfer.
6. No interbasin transfer of water (i.e. from one body of water to another).
7. All new licenses will have an expiry date. Renewal process will occur every 25 years with the onus on the Crown to show why the license should not be renewed. Priority number would not change but new conditions could be applied. Some licenses could be issued with defined shorter terms.
8. Appeals to new development will be done through the Environmental Appeal Board. This needs to be carried out within 30 days of the license date. The person applying for a water license will still have to advertise in local newspapers before an interim license will be granted.
9. Household use has top priority for water use. This limit is set at 1 acre foot/year/house with no need for a license.
10. Traditional agriculture use - watering of cattle or crop spraying - up to 5 acre feet/year. A person can register the use of this water. This is not a license, just a registration or special use allotment with priority to protect the water user in case of future conflicts.

Robert Riewe
Irrigation Soil and Water Specialist
Alberta Agriculture, Food & Rural Development
Lethbridge

The Pea and Bean Market in China

China is one of the largest exporting nations for pea and bean products. At the same time, China also represents one of the largest importing nations for peas and beans. Canada supplies a large portion of China's imports of peas and beans and is expected to maintain that share for a few years as Canadian peas and beans are of high quality and are demanded by the Chinese food processing industry. In 1996, Canada exported over \$11 million worth of peas to the Chinese market making it the fourth largest Canadian agricultural export to China after wheat, barley and canola oil.

China's peas and bean consumption is steadily growing as people's incomes are increasing. Snack food consumption throughout China has become tremendously popular especially consumption of spicy dried pea snacks. Also, traditional products made from peas and beans such as vermicelli (bean starch noodles) have been in strong demand for both domestic and export markets. China sometimes cannot produce enough peas and beans to meet these rapidly growing snack products and

traditional pea and bean product markets. This situation is reflected in China's declining exports and increasing imports of peas and beans.

According to the International Agricultural Trade report of the USDA, China's exports of peas and beans has decreased from 1.5 million MT in 1994 to 0.5 million MT in 1996. At the same time, the import of peas and beans from the U.S., New Zealand and Canada has sharply increased. This trend will likely continue in the next few years.

Two important reasons have contributed to the decrease of exports and the increase of imports of peas and beans in China. One is China's grain production system reform. The Central government is implementing the "governor's grain responsibility system" which sets overall crop production targets for each Chinese province. Under this system, each province has put more focus on production of grains such as wheat, rice and corn which yield more per hectare compared with the yields of peas and beans.

The other reason for the change in imports and exports is the rapid growth in domestic demand. This is fueled by increased consumption of peas as a snack food, by increased processing of peas and beans for products such as vermicelli noodles and by the increased use of peas and beans in China's further developing livestock industry.

Canadian peas and bean exporters to China, like other agriculture exporters, face competition from other countries and tariff quota restraints. U.S. companies have conducted product trials with food processors in China on marrowfat and Columbia type peas for China's pea snack product market. New Zealand has already exported huge volumes of peas and beans to the China market. As the Chinese agriculture sector deregulates and tariff policies change, the market opportunities for peas and beans will become more of a reality. We saw this last year when China dropped the Most Favoured Nation (MFN) tariff rate from 22% to 13% for peas and beans.

There is definitely a huge demand for Canadian peas and beans. Market surveys in some big cities such as Shanghai, Guangzhou and Beijing showed that people in these big cities have a relatively high income, which has spurred growth of the supermarket sector, the domestic food processing industry and food processing industry and food imports. There appears to be enough buying power for many to become regular purchasers of high quality pea and bean snack foods.

As long as we keep our product competitive in terms of price and quality, the increase in the export of peas and beans to China will continue in the next few years.

Song Wang
Research Officer
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New Herbicide Registration for the Birds

BASF Canada made a further commitment to the value-added specialties market with the recent registration of Accord™ herbicide on canaryseed.

"This means that growers of canaryseed can expect excellent control of green foxtail, cleavers, and volunteer flax that they have been getting on wheat," says Michael Schaad, Cereals Market Manager at BASF.

"We are committed to these value-added markets and will continue to pursue registrations on them," adds Bob McAuley, Communications Manager.

Canaryseed or annual canarygrass, is used as food for caged and wild birds. The crop has become significant in western Canada which supplies 75 percent of world production. Accord did not receive registration for any of the recent varieties of canaryseed for human consumption and is not currently registered with any tankmixes.

Canaryseed growers also have the option of Banvel® herbicide for control of broadleaf weeds such as Canada thistle, perennial sow thistle, wild buckwheat and cleavers as well as the tankmix of Banvel + MCPA.

The Accord registration includes both rates of Accord (135 and 165 g/ha) applied when canaryseed is at the 3 - 5 leaf stage. It is effective on green foxtail including Groups 1 and 3 resistant green foxtail - up to five leaves and two tillers, volunteer flax up to 8 cm, and cleavers 1 - 3 whorls.

BASF Canada's diversified product mix in western Canada includes crop protection products such as Banvel®, Basagran®, DyVel®, DyVel® DS, Kumulus® DF, Poast® Ultra, Poast FlaxMax®, Polyram® DF, Polyram 16D, and Ronilan® EG. BASF's stable of products serves the wheat, canola, peas, flax and lentil markets in western Canada.

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AVEC - Research Centre

The Agriculture Value-Added Engineering Centre (AVEC) is composed of three bodies: a Research Centre, a Resource Centre and a Financial Assistance Program. AVEC is another initiative of the Engineering Services Branch of Alberta Agriculture, Food and Rural Development, supporting the agri-food industry. Funding is provided by Agriculture and Agri-Food Canada through the Canadian Adaptation and Rural Development Fund (CARDF) of the Agriculture and Food Council. **The goal of the**

Agricultural Value-Added Engineering Centre is to help meet the engineering-related needs of Alberta's growing value-added processing industry.

The Research Centre is located at the University of Alberta's Ellerslie Research Station (1240 - 127 Street SW, Edmonton). In co-operation with the University of Alberta and other agencies, the centre conducts research directed towards finding solutions and developing information to address agricultural value-added industry's problems and needs. The centre is equipped with table top grain processing equipment for in-house research and for the use of private industry, educational and other researchers. The centre is also purchasing and building equipment to measure engineering properties of agricultural materials (food and non-food products).

Properties of agricultural material play an important role in the design and performance of agricultural machines. Most of the handling and processing of agricultural commodities today is automated. Processes such as seeding, threshing, separating, handling, storage, conditioning, drying and cleaning have been refined through years of crop and machinery development. The engineering properties of a commodity must be assessed at each processing stage.

The American Society of Agricultural Engineers (ASAE) have an extensive listing of engineering properties data for the most common cereal and oilseed cultivars. The Special Crops Product Team, however, has identified a need to develop a data base on engineering properties of 'special' and 'pulse' crops. AVEC Research Centre has undertaken this. The following are some of the properties that will be determined at the centre.

Physical Properties: Size, shape, surface texture, bulk density, specific gravity, void ratio, coefficient of friction, angle of repose, cross sectional area, equilibrium moisture content, static pressure, etc.

Aerodynamic Properties: Drag coefficient, terminal velocity, Reynold number.

Thermal Properties: Specific heat, thermal conductivity, thermal diffusivity.

The data generated from engineering properties measurements are key to the development of a special crop processing industry. Knowing the physical characteristics for special crop commodities permits the design of machines and equipment to match specific processing functions. Processing plant layout and design must be carefully coordinated to meet the quality standards for processed products. **High product quality is only possible if judged against a known or measurable standard.**

This project will provide processors, engineers, and designers the information needed to develop a value-added processing industry. Food and process engineering requires a

quantifiable basis from which to measure and define product quality. Providing a uniform and consistent basis on which to measure product quality is fundamental to this industry's progress.

Kris Chawla
Processing Engineer
Alberta Agriculture, Food & Rural Development
Edmonton

Company Profile - Alberta Sunflower Seeds Ltd

Tom and Emmy Droog, owners of Alberta Sunflower Seeds, started at the bottom, actually 12 feet below sea level, in their birthplace of Holland. Tom, who had spent his boyhood working on the family farm in Holland, immigrated to Canada to seek his fortune in 1972. During the next two years he worked for different employers and met his bride-to-be, Emmy, who had also immigrated from Holland to Canada in 1970. In 1974, they bought a farm in Bow Island, Alberta, where they live today with their children, Randy and Christy.

The husband-and-wife team started a farming career growing wheat, flax, and sugar beets, but found dependence on government and marketing restrictions too confining. When Droog, who has a penchant for marketing, found out that sunflower seeds were not under the jurisdiction of government agencies, he investigated further. He discovered that this was a crop he could grow, process and market himself. After extensive research, he was satisfied he could explore many possibilities in different markets. And with this entrepreneurial spirit he revolutionized the sunflower seed industry forever.

In 1982, committed to the belief that the Bow Island area produced superior seeds, the Droogs created Alberta Sunflower Seeds Ltd. At the time, Alberta Agricultural Development Corporation was offering incentives for agricultural diversification. With provincial assistance, keen management, some luck and lots of faith, Tom and Emmy Droog were able to pledge support for a much larger processing plant than they had originally intended.

Alberta Sunflower Seeds Ltd. started out by packaging and marketing birdseed under the Bird Preferred label. Bird Preferred birdseed is now marketed all over Canada and in parts of the United States in bulk, bagged and small packages. In the early years the larger seeds were exported to England, Spain and Taiwan. But when Tom Droog learned that his foreign customers were roasting and salting his larger seeds for human consumption, he decided to venture into the confection business himself. The larger seeds were then roasted, flavoured and packaged under Spitz label.

Today, Droog's sunflower seeds are grown on some 6,000 acres under contract with 32 farmers in Alberta, Saskatchewan and Manitoba. Top quality hybrid seed is shipped directly to the

farmers and is ready for seeding in May. Sunflowers are planted on a four-year rotation schedule to reduce disease and pests. Droog is adamantly against the use of sprays or artificial agents on crops. (The agricultural research station in Brooks, Alberta often grows sunflower seeds for test purposes. Principal concerns are colour, quality, size and disease control). The total crop is hauled to the plant throughout the harvest months of October and November using farm trucks and custom hauling. Droog states, "I think I am one of the few processors in North America who moves product directly from the farm to the retail outlets."

The Spitz brand, which is a registered trademark, is sold through a network of 35 truck-to-store distributors, most of which are husband-and-wife teams. The Droogs began in a marriage partnership that has developed into a successful business partnership, and they endorse the strength of the arrangement. Approximately, 10,000 accounts are serviced across Canada.

Guy Peckham, general manager of Spitz Sales Inc. in Medicine Hat, Alberta, says the company's advantage is service. Spitz maintains staff to ensure the product is distributed, delivered, displayed, priced and rotated properly. Stores can rely on delivery as every account is visited a minimum of every three weeks, and many are visited each week. As for freshness, in the top demand summer season, Spitz sunflower seeds are sometimes still warm when delivered to the stores."

For retailers and customers, Spitz offers a product with a distinctive flavour difference and an eye-catching, re-sealable bag. Spitz sunflower seeds are available in four flavours: salted, seasoned, barbecue and country. Spitz also markets salted pumpkin seeds.

The resealable bag ensures freshness with every handful of Spitz. The see-through packaging allows the customer to see the high-quality seeds. The ingredient and nutritional value listings attract the health-conscious consumer of the '90's. High quality freshness, a variety of flavours and consistently reliable delivery and service characterize Droog's vigorous approach to marketing Spitz. "If it's not good enough for me to 'spit(z)', it's not good enough for my customers," says Droog.

Producing just 50,000 bags of Spitz in its first year of operation, Alberta Sunflower Seeds Ltd. has grown to a multimillion dollar processing plant operation that now produces 75,000 bags of Spitz a day. The plant employs a dedicated staff of 25 in winter and 35 in summer. With a sales staff of eight in Medicine Hat and 35 distributors under their wing, the Droog's employ up to 78 people every year.

Droog remarks, "What can you do for your country in return for what your country is doing for you?" Community minded and keen to return benefits to Canada, the country of their adoption and success, Tom and Emmy Droog have participated in many sponsorships, promotions, team and

community events. The Droogs even have a policy whereby all distributors are allotted funds for sponsorship of a sports team in their own communities. Tom frequently speaks to businesses, community groups, and high school students about entrepreneurship and the sunflower seed business. His advice to the upcoming entrepreneur is: "Perseverance can make a good idea become a reality. Don't give up your dream."

Droog has gained recognition in the business community. In 1992, he was awarded the Businessman of the Year Award, the Alberta Chamber of Commerce Small Business Award, and the Governor General Medal for contribution to Canada. In 1993, he received the Pinnacle Award for achievement.

Expanding further into Ontario and international markets with the Spitz product is the challenge. The company is preparing for double the production. "We just have to make sure we have the seeds, the roasters, the people and the packaging line." But he assures his customers that the quality of the product will not be altered.

Alberta Sunflower Seeds Ltd
Tom and Emmy Droog
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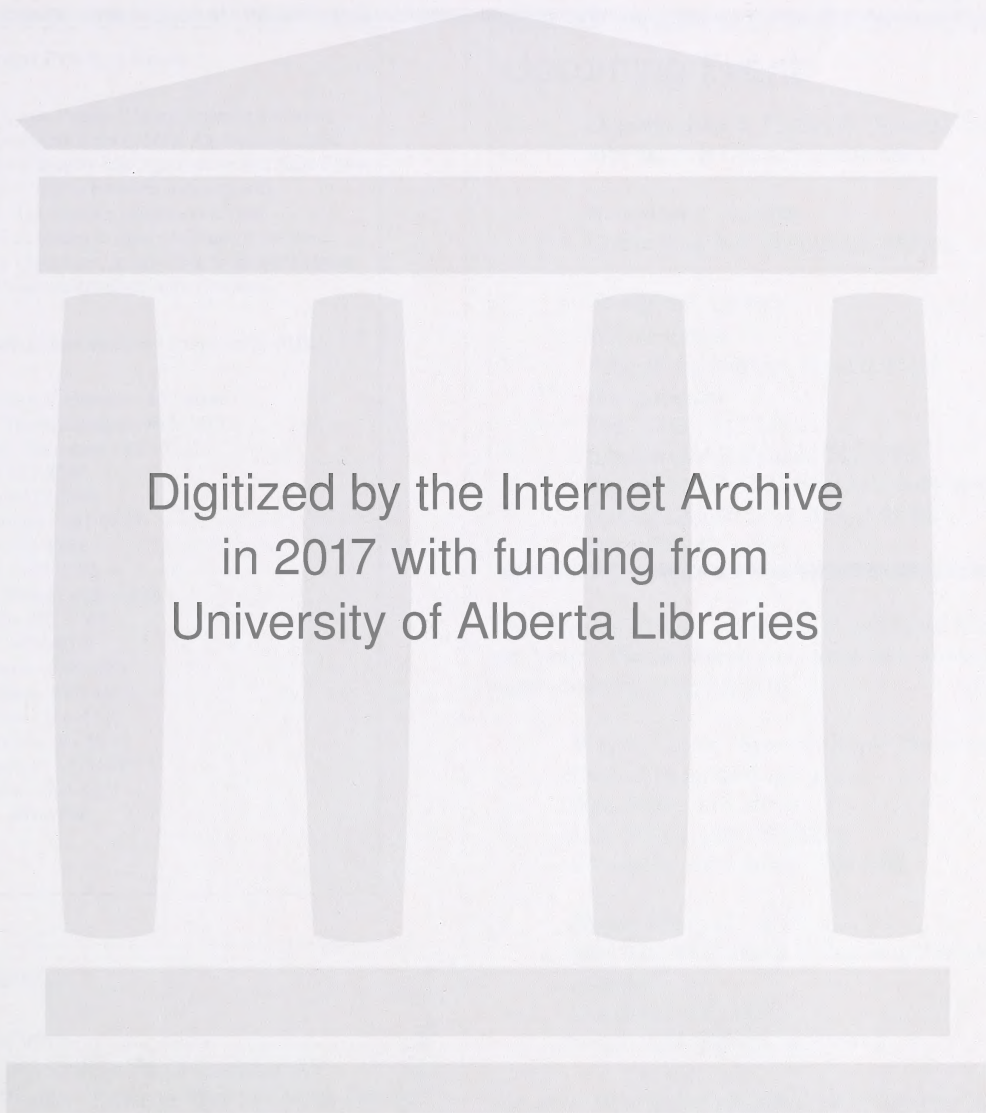
Upcoming Event

Opportunities & Profits II - Special Crops into the 21st Century Conference

November 11 - 13, 1998
Convention Inn, Edmonton, Alberta

To register, contact:
Wayne Goruk
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Tel (403) 427-3122 (dial 310-0000 first if
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